Response to Comments on Final Public Review Draft Prioritization of Toxic Air Contaminants Under the Children's Environmental Health Protection Act

July, 2001

Response to Comments on Acrolein from Earl Meierhenry, DVM, PhD

Comment 1. Why was there no mention of increased potential acrolein air and drinking water exposure to farm kids following pesticide use? This would increase risk.

The California Pesticide Use Report indicates that several hundred thousand pounds of acrolein pesticide are used each year in California. This is too big to ignore.

Response 1: The acrolein summary noted (under Principal Sources of Exposure) some of acrolein's pesticidal uses. OEHHA will extend this information in the final document by noting that, according to DPR's Annual Pesticide Use Reports for 1996-1999, over 300,000 pounds of acrolein are applied in California each year. (The majority of this is used on rights of way, rather than on farms). It is important to note that the health impacts of pesticides in their pesticidal uses are excluded from consideration under SB25, as explained in the introductory section of the document.

Comment 2. Why was there no mention of the toxic effects reported in the acrolein animal toxicity database used by the Department of Pesticide Regulation?

By Law, that material has been reviewed by state toxicologists at public expense. It should be used. Final reports, not just published information, are available.

Response 2: OEHHA relies upon reports published in the peer-reviewed scientific literature wherever possible, but also considers reports submitted to DPR for regulatory purposes where these contain relevant information which is not available from published sources. There are several studies on acrolein toxicity following oral dosing included in the DPR toxicity database: these were considered to be of limited relevance in assessing impacts of airborne exposures to children. There are two chronic toxicity studies, one in rats and one in dogs. The rat study showed no indication of an adverse effect from acrolein exposure. In the dog study, a decrease in the activated partial thromboplastic time (hypercoagulation) was identified as a possible adverse effect from acrolein exposure (NOAEL = 0.1 mg/kg); however, there is no indication that children might be more sensitive to this endpoint than adults. There are two teratology studies in the database, one in rats and one in rabbits. Neither showed any adverse developmental effects. There are two reproductive studies in the database. In one two-generation study in Crl:CD*(SD)BR rats, a "possible adverse effect" was noted. In this gavage study, there was a high incidence of mortality and respiratory complications that were determined to be due to the dosing protocol. The summary in the database noted that the parental NOAEL in this study was 1 mg/kg (hyperplasia/hyperkeratosis). The only progeny effect was a significant reduction in pup body weights, starting on lactation day 7 for the high dose group (6 mg/kg-day). For males only, this reduction persisted until the end of the study. The progeny NOAEL was determined to be 3 mg/kg (reduced pup weight during lactation), which is a dose level associated with toxicity in the adults. And finally, there are two oral oncogencity studies in the database. There is a mouse study, which showed no evidence of a

treatment-related effect, and there is a rat study that showed pancreatic acinar cell tumors (adenoma and carcinoma) resulting from acrolein exposure.

In addition to the data reviewed and summarized in the toxicity database, we also looked at other information submitted to DPR on acrolein but did not find anything else that would be relevant for the purposes of this document. The OEHHA document is intended to review only data indicating potential to impact children more than adults. Since the data from the DPR toxicity database do not provide information relevant to evaluating any differential impact between children and adults, those data were not incorporated into the document.